PORSF
11.3.31.5.1

Childs, John

From: Betsy Striplin [bstriplin@striplin.com]
Sent: Monday, December 11, 2000 1:58 PM
To: John Childs
Cc: Gene Revelas
Subject: T-6 Scope Memo

John -

Our scope of work for the water quality monitoring during T-6 dredging is found in the attached memo. Additional conversations with you and perhaps Pad or Sebastian relative to the end uses of these data may result in a tweak this scope. I'll be in Portland Tuesday, Wednesday and Friday of this week and could meet with you on one of those days (late Tuesday, Wednesday afternoon, or late Friday). Given that time is short, I'd like to get this scope finalized quickly. If you can't reach me, give Gene Revelas a call at our Olympia office (360-705-3534) with your thoughts. He can modify the scope/costs accordingly.

Betsy

Betsy Striplin
Striplin Environmental Associates
15111 8th Avenue SW, Suite 303
Seattle, WA 98166
(206) 241-5185
(206) 241-5159 FAX
bstriplin@striplin.com

STRIPLIN Environmental Associates

15111 8th Avenue SW, Suite 303
Seattle, WA 98166
(206) 241-5185
FAX (206) 241-5159

MEMORANDUM

TO: John Childs

FROM: Betsy Striplin

DATE: December 11, 2000

SUBJECT: Work Order for Water Quality Monitoring During T-6 Dredging

---

This memorandum briefly describes a scope of work to prepare a field sampling plan and conduct water quality sampling in the vicinity of upcoming dredging operations at Terminal 6. Project schedule and a rough budget are also included for each task. Note that the actual budget for sampling and associated analyses cannot be determined until after the field sampling plan has been completed and the numbers of samples and analyses determined. It would be very helpful to get additional direction from the Port as to the overall objective of this monitoring effort to help establish the most appropriate sampling program.

Task 1. Literature Review.

This task is presented and costed as two approaches that reflect different levels of effort for a literature review.

Alternative 1a. Abbreviated Literature Review

The objective of an abbreviated literature review will be to collect and summarize information that will be useful for the development of a T-6 maintenance dredging water quality sampling plan. This literature review will incorporate previously-summarized information on water quality impacts associated with dredging. Literature sources might include environmental impact statements, summary documents (if available), and approaches and results from a few actual monitoring events including recent dredging in the Duwamish River's East Waterway. Results of the literature review will be included in the Field Sampling Plan (Task 2).

This level of literature review could be completed in less than two weeks at a cost of approximately $5,000.

Alternative 1b. Thorough Literature Review

The objective of a thorough literature review of the water quality impacts of dredging will be to develop a well-referenced overview using both historical and recent information that focuses on the potential impacts of chemical contaminants released during dredging. A large amount of information was generated by the U.S. Army Corps of Engineers Waterways Experiment Station in the 1970s and 1980s. Most of this information pertains to measures of total suspended solids, dissolved oxygen, and similar conventional parameters. In contrast, the water quality monitoring for many recent contaminated sediment dredging projects has included both conventional parameters and concentrations of chemicals of concern. The literature review will evaluate both historical and recent information to identify possible chemical-related impacts and the steps that can be taken to minimize these risks.

A thorough review of the literature is anticipated to require approximately 2 months. This review will be provided to the Port of Portland as a stand-alone document. It is anticipated that this review could be completed for approximately $25,000.

Task 2. Development of a Field Sampling Plan

A field sampling plan will be developed that includes the following information: review of sediment conditions within the dredge prism; locations of sampling stations; identification of conventional and chemical analytes of concern; monitoring frequency; analytical methods; quality assurance/quality control (QA/QC) procedures; data management; and reporting.

The field sampling plan will require approximately two weeks to complete at a cost of approximately $5,000.

Task 3. Water Quality Monitoring

Water quality will be monitored during dredging in compliance with the Field Sampling Plan prepared under Task 2. At present we assume 5 days of Hydrolab monitoring (conventional measurements and plume tracking) at three stations and laboratory analyses (DDT, conventional parameters) for 30 water samples. Based on these assumptions, the field program, including laboratory analyses, should be able to be performed for less than $30,000.

Task 4. Reporting

A brief letter report will be prepared containing sampling and laboratory activities (including QA/QC results) and monitoring results. The report will be provided to the Port of Portland in hardcopy and electronic formats.

The letter report will be available two weeks following receipt of the data from the laboratory. Reporting costs are anticipated to be $6,000.

Task 5. Agency/Public Review

At the request of the Port, Striplin will participate in agency briefings before and after dredging. A pre-dredge briefing is anticipated at which the Port will present their plan for water quality

monitoring. A second briefing is anticipated following receipt of the final report during which the Port will present the results of the monitoring program.

The first meeting is anticipated to occur during late December 2000 or the first week of January 2001 and the second meeting is anticipated to occur in February 2001. We have allocated $3,000 for this task.

Cost Summary

Anticipated costs are summarized below.

Task 1. Literature Review	
A. Abbreviated Review	$5,000
B. Thorough Review	$25,000
Task 2. Field Sampling Plan	$5,000
Task 3. Sampling and Analysis	$30,000
Task 4. Reporting	$6,000
Task 5. Public/Agency Review	$3,000

Total including abbreviated literature review: $49,000
Total including thorough literature review: $69,000

Childs, John

From: Keith Kroeger [kak@hartcrowser.com]
Sent: Friday, December 15, 2000 2:01 PM
To: childj@PortPtld.com
Cc: Howard Cumberland; Quinn@PortPtld.com
Subject: Water Quality Monitoring Program Proposal

Monitoring Scope.doc

Please review this DRAFT proposal for the Water Quality Monitoring Program. Feel free to contact us with any questions.

Thanks

Keith Kroeger
Aquatic Toxicologist

December 15, 2000

Mr. John Childs
Project Manager, Environmental Resources
Port of Portland
PO Box 3529
Portland, OR 97208

Re: Sampling and Testing Options of Dredged Material from Terminal 5, Berth 503, and Terminal 6, Berths 603-605

Dear Mr. Childs,

Hart Crowser is pleased to present this scope of work and cost proposal in order to conduct a field sampling and chemical analysis program that characterizes the water quality during the dredging of Terminal 5, Berth 503, and Terminal 6, Berths 603-605 sediments. The tasks proposed and estimated costs are outlined below.

PROJECT UNDERSTANDING AND APPROACH

Hart Crowser understands that the Port of Portland is going to dredge sediments at Terminal 5, Berth 503, and Terminal 6, Berths 603-605, and discharge this material to the sediment rehandling facility, located near Suttle Road. The Port is requesting a water quality monitoring program to assess the impacts of dredging at these berths and also at the point of discharge at the Suttle Road sediment rehandling facility. The water quality monitoring program will include monitoring turbidity at these berths analyzing water samples for contaminants of concern (organotins, pesticides, total suspended solids, and total and dissolved metals) at Terminal 6, Berths 603-605.

SCOPE OF WORK

The purpose of our proposed work is to assess site water conditions for potential turbidity impacts during dredging activities and the presence or absence of chemical contamination. We

have developed three tasks for this project that can be combined to accomplish monitoring programs with variable levels of intensity, depending on the Port's needs. The tasks are outlined below and are discussed in further detail in this section.

- Task 1 – DEQ Permit Requirements for Dredge Site Turbidity Monitoring only
- Task 2 – Dredge Site Physical Parameter Monitoring using the Seabird® CTD
- Task 3 – Dredge Site Sampling of Mid-water Column for Contaminants of Concern

Task 1 – DEQ Permit Requirements for Dredge Site Turbidity Monitoring only

At present, we do not know the specific DEQ water quality monitoring requirements. Therefore, this task has been scoped and costs estimated based on historic DEQ monitoring programs. Hart Crowser will assist the Port in assessing the impacts of dredging at Terminal 5, Berth 503, and Terminal 6, Berths 603-605 by monitoring turbidity levels at the surface of the water column at four sampling locations. Turbidity monitoring locations will be positioned at a minimum of 3 locations:

- Upstream of the point of dredging (background);
- Directly in the dredge plume; and
- Downstream of the point of dredging at the mixing zone.

Task 2 – Dredge Site Physical Parameter Monitoring using the Seabird® CTD

Hart Crowser will assist the Port in assessing the impacts of dredging at Terminal 5, Berth 503, and Terminal 6, Berths 603-605 by monitoring pH, turbidity, temperature, dissolved oxygen, and conductivity at the top, middle, and bottom of the water column using the Seabird® CTD. A total of three physical parameter monitoring locations will be positioned at a minimum of 3 locations:

- Upstream of the point of dredging (background);
- Directly in the dredge plume; and
- Downstream of the point of dredging at the mixing zone.

Task 3 – Dredge Site Sampling of Mid-Water Column for Contaminants of Concern

Hart Crowser will assist the Port in assessing site water quality during dredging activities for the absence or presence of chemical contamination. Water samples will be collected from the middle of the water column. At a minimum, we recommend collecting an upstream sample (background) and a downstream sample at the mixing zone boundary. Water samples will be submitted to Columbia Analytical Services (CAS) for analysis of organotins, total suspended solids (TSS), pesticides, and metals (total and dissolved).

ESTIMATED COST

The estimated costs for the above activities is based on a per day basis in accordance with the following breakdown:

develop plan

Task 1 – DEQ Permit Requirements for Dredge Site Turbidity Monitoring only	$887/day
Task 2 – Dredge Site Physical Parameter Monitoring using the Seabird® CTD	$1302/day
Task 3 – Dredge Site Sampling of Mid-water Column for Contaminants of Concern*	$2717/day

- Report

*In Task 3, we have assumed analysis of two water samples ($619 each sample for the full suite of analyses). Additional samples can be collected and analyzed for $1000 each, which includes the additional cost of field collection, data validation and reporting. If Task 3 is required, daily costs need to be added to Task 1 or Task 2.

We appreciate this opportunity to submit our proposal and look forward to your favorable consideration. If we may provide any additional information or clarification of this proposal, please call us at (503) 620-7284.
Sincerely,

HART CROWSER, INC.

Last yrs WQ cert. — objective
- Extent / characteristics of Plan
-seabird

KEITH A. KROEGER - WQ cert
Staff Aquatic Toxicologist

HOWARD L. CUMBERLAND
Associate

- verify Elutriate test
- DRAFT
- 1 day @ T5
- 2 day @ T1